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Library User's Guide
Comprehensive Approach to Reusable Defense
Software (CARDS)

Informal Technical Report

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Comprehensive Approach to Reusable Defense Software

STARS-VC-B006/003/00
24 May 1994

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INFORMAL TECHNICAL REPORT
For The
SOFTWARE TECHNOLOGY FOR ADAPTABLE, RELIABLE SYSTEMS
(STARS)

Command Center Library Release 4.0
Library User's Guide
Comprehensive Approach to Reusable Defense Software
(CARDS)

STARS-VC-B006/003/00
24 May 1994

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Electronic Systems Center
Air Force Material Command, USAF
Hanscom AFB, MA 01731-2816

Prepared by:

D. N. American
and
Electronic Warfare Associates, Inc.
under contract to
Unisys Corporation
12010 Sunrise Valley Drive
Reston, VA 22091

Distribution Statement "A"
per DoD Directive 5230.24
Approved for public release, distribution is unlimited

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(CARDS)

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(Signatures on File)

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ABSTRACT

This Command Center Library (CCL) User's Guide was developed under the Comprehensive Approach to Reusable Defense Software (CARDS) Program to help disseminate the Portable Reusable Integrated Software Modules (PRISM) Program documentation and knowledge. It represents the current state of the CCL Models. It is a "living" document and will be updated with every CCL release. This document describes the method needed to access the CCL Models.

This Guide is specific to CCL Model Release 4.0. The intended audience is anyone desiring an understanding of, or wanting access to, the current release of the CCL Models.

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1 OVERVIEW

This Command Center Library (CCL) User's Guide describes how to access the CCL Models Release 4.0 (hereafter referred to as "Models"). This Guide shows users the method needed to access the CCL and, as such, does not go into great detail about the CCL's design. For a more in-depth view of the library models themselves, refer to the CCL Model Document Release 3.3 and Command Center Library Version Description Document Release 4.0) [CARDS93 and CARDS93a].

The Models are being iteratively developed by the Comprehensive Approach to Reusable Defense Software (CARDS) Program. The Models are enhanced to reflect new information, new documentation, and new releases of existing documentation. Subsequent releases of the CCL will be accompanied by updates to this Guide.

1.1 Background

The Generic Command Center (GCC) project (the forerunner of the Portable, Reusable, Integrated Software Modules (PRISM) Program) integrated components for use in command centers.

"The Generic Command Center Phase 2 prototype is an implementation of a portion of the Generic Command Center (GCC) architecture. The purpose of this prototype is to validate the concept of building command centers by integrating large reusable components. The required functionality is that of processing ... messages; establishing a database; displaying information in a geographic information system; creating tables of information; and creating briefings that interface with the database. The implementation was consistent with the GCC architecture and used several commercial-off-the-shelf (COTS) products as components The results of the GCC Phase 2 are extremely promising toward the concept feasibility of integrating large software components for application in the Command Center domain." [ESD92]

PRISM, which took over from GCC in January 1992, has an ambitious goal of "fleshing out" a real generic architecture for command centers. PRISM proposes to provide users with 80% of the required resources to produce a new command center as well as information on acquiring or producing the remainder. The CARDS library models are incrementally encoding and disseminating information generated by PRISM.

1.2 Notation Used in this Document

This Guide describes procedures to interact with the UNIX operating system through a UNIX shell interpreter. Therefore, examples are given that sometimes use a special notation. In presenting the examples, the following notation is used:

% - the UNIX shell prompt (is system dependent).

< user_supplied_information> - user-supplied information where "user_supplied_information" is the descriptive keyword(s) you replace with text without the angled brackets.

text - the text you type.

[Quit] - a graphical command choice or menu option.

Example: % <editor> Browser

you would not type the percent sign "%", which is the UNIX shell prompt; you would insert the name of a text editor of your choice, such as vi or emacs in place of "editor"; but you would type the file name "Browser" as shown: % vi Browser

1.3 Requirements

The Models are browsed from Fairmont, WV, either remotely via AFS or remotely via telnet. Both of these methods require Internet access. Different library access methods have different hardware and software requirements.

The assumptions and constraints are listed according to access method.

1.3.1 Running Remotely via AFS Over Internet

To execute the Libraries operational software on the user's machine, it is necessary to:

- Have a CARDS user AFS account. See Section 1.4, Accounts/Problems.
- Have an Internet Connection. See Section 1.6, Internet.
- Have a Sun 4 Architecture workstation with SunOS 4.1.X or higher.
- Be running AFS version 3.2 or higher and have the CARDS cell cards.com mounted on the user's machine.
- Be running the Motif window manager (mwm), v1.1 or higher, under X11 R4 or X11 R5.

NOTE: When you obtain a CARDS account, you will get a CARDS AFS account for you to "klog" into the CARDS library system.

1.3.2 Running Remotely via Telnet Over Internet

To execute the Models operational software on the CARDS facility machine and display on the user's local workstation, it is necessary to:

- Have a CARDS user UNIX account. See Section 1.4, Accounts/Problems.
- Have a CARDS user AFS account. See Section 1.4, Accounts/Problems.
- Have an Internet Connection. See Section 1.6, Internet.
- Be running the Motif window manager (mwm), v1.1 or higher, under X11 R4 or X11 R5 on the user's local machine.

1.4 Accounts/Problems

To obtain a CARDS account, to get help and information, or report a problem, please contact:

CARDS

100 University Drive

Fairmont, WV 26554

Phone: (800) 828-8161, (304) 367-8321

FAX: (304) 367-8211

email: hotline@cards.com

1.5 X Window System

The X Window System is a network transparent window system developed at MIT which runs on a wide range of machines. An X server and window manager must be running on the machine on which a CARDS operational library is being displayed. The X Window System version must be X11 R4 or X11 R5. For more information on the X Window System, contact the MIT Software Center at the X Hotline: (617) 258-8330. X Window's source code is available on [export.les.mit.edu](ftp://export.les.mit.edu) via anonymous ftp.

1.6 Internet

Internet is a collection of worldwide networks linking research, university, and military sites. Millions of computers, through the use of TCP/IP standards, become an electronic community. Once you are a member of the community, you can have access to a vast information base. The only cost is the network connection itself. For more information about Internet contact:

SURANET

8400 Baltimore Blvd., Suite 101

College Park, MD 20740-2496

Phone: (800) 787-2638

2 GETTING STARTED

Prior to having access to the system, a user must have a CARDS account. See Sections 1.3 (Requirements) and 1.4 (Accounts/Problems).

Access to a Model operational software is provided via the CARDS operational software located under the AFS "cards.com" cell on the CARDS facility machine in Fairmont, WV.

If the user has access to a Sun 4 Architecture workstation running Motif window manager (mwm) under X11 R4 or X11 R5, and AFS version 3.2 or higher with the cards.com cell mounted, the Model operational software should be run (remotely via AFS) directly on the user's machine.

If, however, the user does not have access to AFS with the cards.com cell mounted or does not have a Sun 4 Architecture workstation, but can run an X11 R4 or X11 R5 server and the Motif window manager (mwm), it is possible to run the Model operational software (remotely using telnet) on the CARDS facility machine.

2.1 Running Remotely via AFS

1. Log into a Sun 4 Architecture workstation.
2. Start X Window using the Motif window manager (mwm). If "/afs/cards.com/bin" is not in your path, add it now (see Appendix A).
3. Pull up any one of the following windows:
 - command window.
 - shell tool.
 - xterm window.
 - console window.

4. Authenticate yourself to AFS:

```
% klog -prin <CARDS_AFS_user_name> -cell cards.com
```

- For example, if AFS user "smith" is running from a remote site, the command would look like: % klog -prin smith -cell cards.com
- NOTE: If the user's home machine is a CARDS facility machine, the klog command can be used by itself to log into the CARDS user AFS account: % klog
- The user will then be prompted for the password as follows:

Password: <CARDS_AFS_user_password>

5. Check (optional) to see if you are klog'ed: % tokens
 - If there is not a token for afs@cards.com, then you did not klog into cards.com (go back to step 4).
6. Run the RLF Graphical Browser: % rungb
7. A Library Launcher has been created to allow for launching of a library or library model, (see figure 2-1).
 - From this launcher you may enter a different library, e.g., PRISM_Distribution_Library, or you may launch a particular model, e.g., the Requirements model.
 - To select a particular library or library model, move the cursor to the desired node then press and "hold" the left mouse button. A pull down menu then gives you option to choose from, e.g., launch model or view description. Move the cursor to the desired option and release the mouse button.

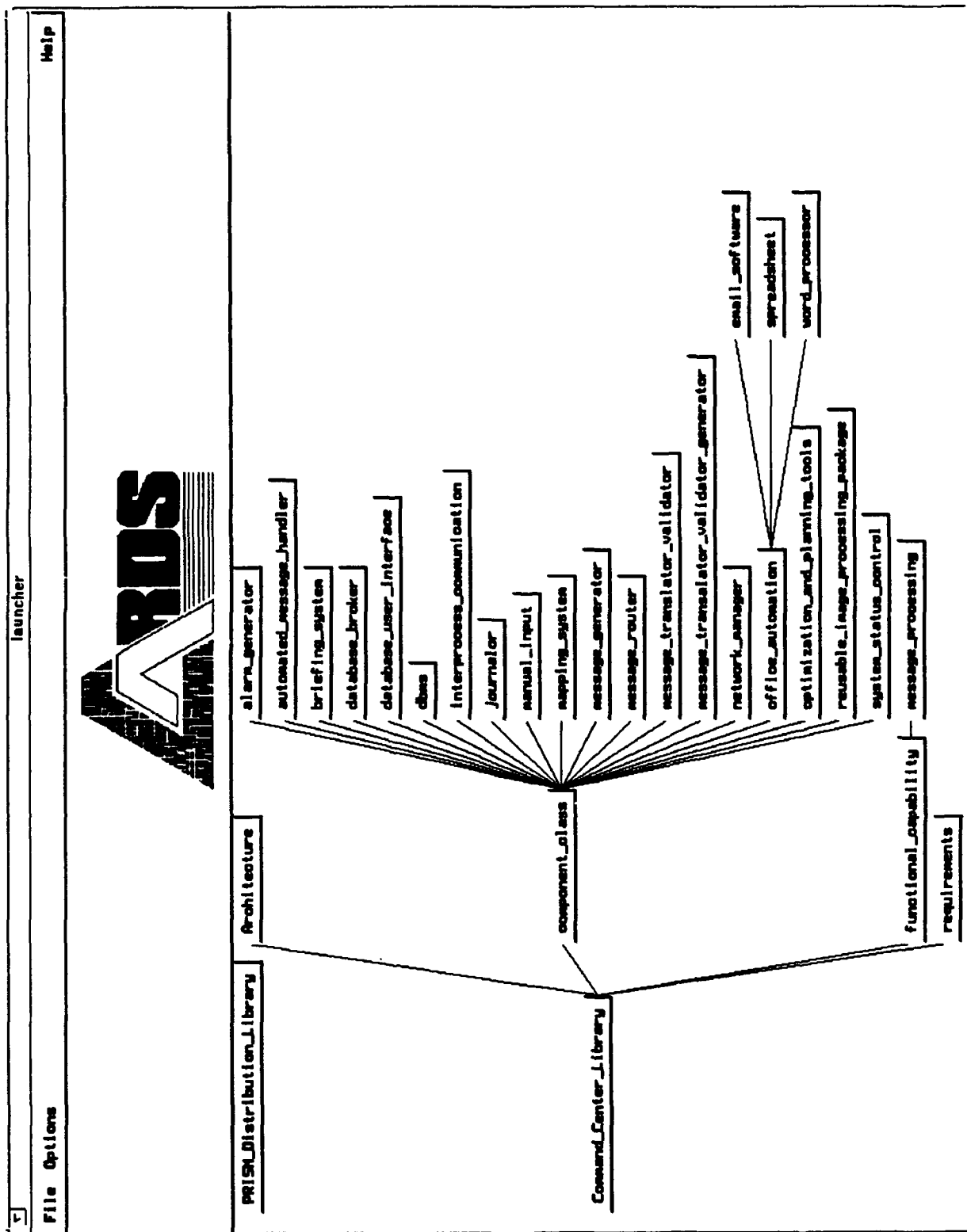


Figure 2-1 CARDS CCL Launcher

2.2 Running Remotely Using Telnet

1. Log into your machine.
2. Start X Windows using the Motif window manager (mwm).
3. Pull up any one of the following windows:
 - command window.
 - shell tool.
 - xterm window.
 - console window.
4. Record your machine's IP address: % arp <your_machine_name>
 - For example, if your machine's name is blakjack, the arp command would return your machine's name followed by its IP address in parenthesis as:

blakjack (188.183.40.5)
5. Allow the RLF Graphical Browser to display on your machine using the CARDS IP address: % xhost + 192.133.70.4
6. Connect to the CARDS Library: % telnet 192.133.70.4
 - NOTE: You should now be connected to the CARDS facility machine called Solitaire. Sometimes user logins are transferred to another CARDS facility machine, such as Dealer; but the functionality is the same.
7. Log into the CARDS facility machine (Solitaire):
 - a. Login: <CARDS_UNIX_user_name>
 - b. The user will then be prompted for the UNIX password as follows:

Password: <CARDS_UNIX_user_password>
 - c. The user will then be prompted for the AFS password as follows:

Password: <CARDS_AFS_user_password>

d. NOTE: If you were not prompted for the Password, you will have to "klog" (see step 4 in the previous section "Running Remotely via AFS").

8. Check (optional) to see if you are klog'ed: % tokens

If there is not a token for "afs@cards.com", then you did not successfully klog into cards.com. You will now have to "klog" (see step 4 in the previous section "Running Remotely via AFS").

9. Set the environment so the RLF Graphical Browser can be displayed on your machine:

- If you are using the C shell (csh):

```
% setenv DISPLAY <your_machines_IP_address>:0.0
```

- If you are using the Bourne shell (sh) or Korn shell (ksh):

```
% DISPLAY=<your_machines_IP_address>:0.0
```

```
% export DISPLAY
```

10. Run the RLF Graphical Browser: % rungb

2.3 Library Startup

To access the library, perform the following:

1. Select the library option from the "Choose a Library" pull-down menu, e.g., "PRISM Documentation v1.0".
2. Select the "Enter Library" option thru the "Choose a Command" pull-down menu.
3. Select the "OK" button to enter the choosen library.

APPENDIX A - Modifying Path Variable

A.1 Modifying the C Shell "path" Variable

If the C shell (csh) is used, the "/afs/cards.com/bin" directory can be placed in the command search path by modifying the C shell "path" variable either temporarily or permanently.

To see if "/afs/cards.com/bin" is already in your path: % echo \$path

The "/afs/cards.com/bin" directory can be temporarily placed in the command search path by modifying the C shell "path" variable. This can be done by issuing the following command at the C shell prompt: % set path=(/afs/cards.com/bin \$path)

This command will add directory "/afs/cards.com/bin" to the current command search path. However, this update is temporary (when the current shell is exited, this modification is lost).

The "/afs/cards.com/bin" can be permanently placed in the command search path by editing the C shell initialization file (named ".cshrc") in the user's home directory. This is accomplished by inserting the following line into the ".cshrc" file in the user's home directory:

```
set path=(/afs/cards.com/bin $path)
```

where \$path is the shell variable containing the current command search path.

Alternatively, the "/afs/cards.com/bin" directory can be added to an existing "set path" statement in the ".cshrc" file. Since the C shell reads the ".cshrc" file each time it is started, these variable settings are effectively permanent until the ".cshrc" file is edited again.

The "source" command is a valuable tool for working in the current shell environment. When the "source" command is invoked, the C shell reads and executes the commands in the specified file. Since no new subshell is created, the "source" command can be run specifying the ".cshrc" file to modify the current shell environment without having to exit the current C shell and start a new C shell. Therefore, after the ".cshrc" file has been properly updated, the following command can be used to update the current shell environment: % source ~ /.cshrc

where tilde (~) is expanded by the C shell to be the path to the user's home directory.

A.2 Modifying the Bourne Shell "PATH" Variable

If the Bourne shell (sh) is used, the "/afs/cards.com/bin" directory can be placed in the command search path by modifying the Bourne shell "PATH" variable either temporarily or permanently.

To see if "/afs/cards.com/bin" is already in your path: % echo \$PATH

The "/afs/cards.com/bin" directory can be temporarily placed in the command search path by modifying the Bourne shell "PATH" variable. This can be done by issuing the following command at the Bourne shell prompt:

```
$ PATH=/afs/cards.com/bin:$PATH; export PATH
```

This command adds the directory "/afs/cards.com/bin" to the current command search path. However, this update is temporary (when the current shell is exited, this modification is lost).

The "/afs/cards.com/bin" can be permanently placed in the command search path by editing the Bourne shell initialization file (named ".profile") in the user's home directory. This is accomplished by inserting the following line into the ".profile" file in the user's home directory:

```
PATH=/afs/cards.com/bin: $PATH; export PATH
```

where \$PATH is the shell variable containing the current command search path.

Alternatively, the "/afs/cards.com/bin" directory can be added to an already existing "PATH=" statement in the ".profile" file. Since the Bourne shell reads the ".profile" file each time it is started, the variable settings are effectively permanent until the ".profile" is edited again.

The "." command is similar to the C shell "source" command and can be used to update the current shell environment with the modifications made to the ".profile" file without having to exit the current Bourne shell and startup a new shell. Thus, after the ".profile" file has been properly updated, the following command can be used to update the current shell environment:

```
% . $HOME/.profile
```

where \$HOME is expanded by the Bourne shell to the user's home directory.

APPENDIX B - References

- [CARDS93] Command Center Library Model Document, Informal Technical Report, STARS-VC-B015/2/00, 15 February 1994.
- [CARDS93a] Command Center Library Version Description Document Release 4.0, STARS-VC-B007/003/001, 24 May 1994
- [ESD92] Generic Command Center Phase 2 Prototype Summary Report, ESD/AVS Hanscom AFB, Jan 92.
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- [SUN91] SunOS 4.1.1 Rev B. Release & Install. Revision B of 1-18-91. Sun Micro systems.